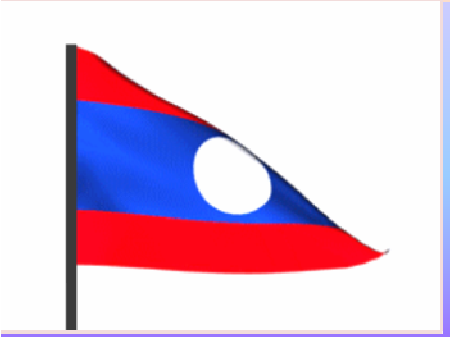
The 8th Meeting of the GEOSS Asian Water Cycle Initiative International Coordination Group (AWCI ICG) and the 1st AWCI Climate Change Assessment and Adaptation (CCAA) Study Workshop

Seoul, South Korea, 6 – 8 October, 2011



Country Report of Lao P D R

by

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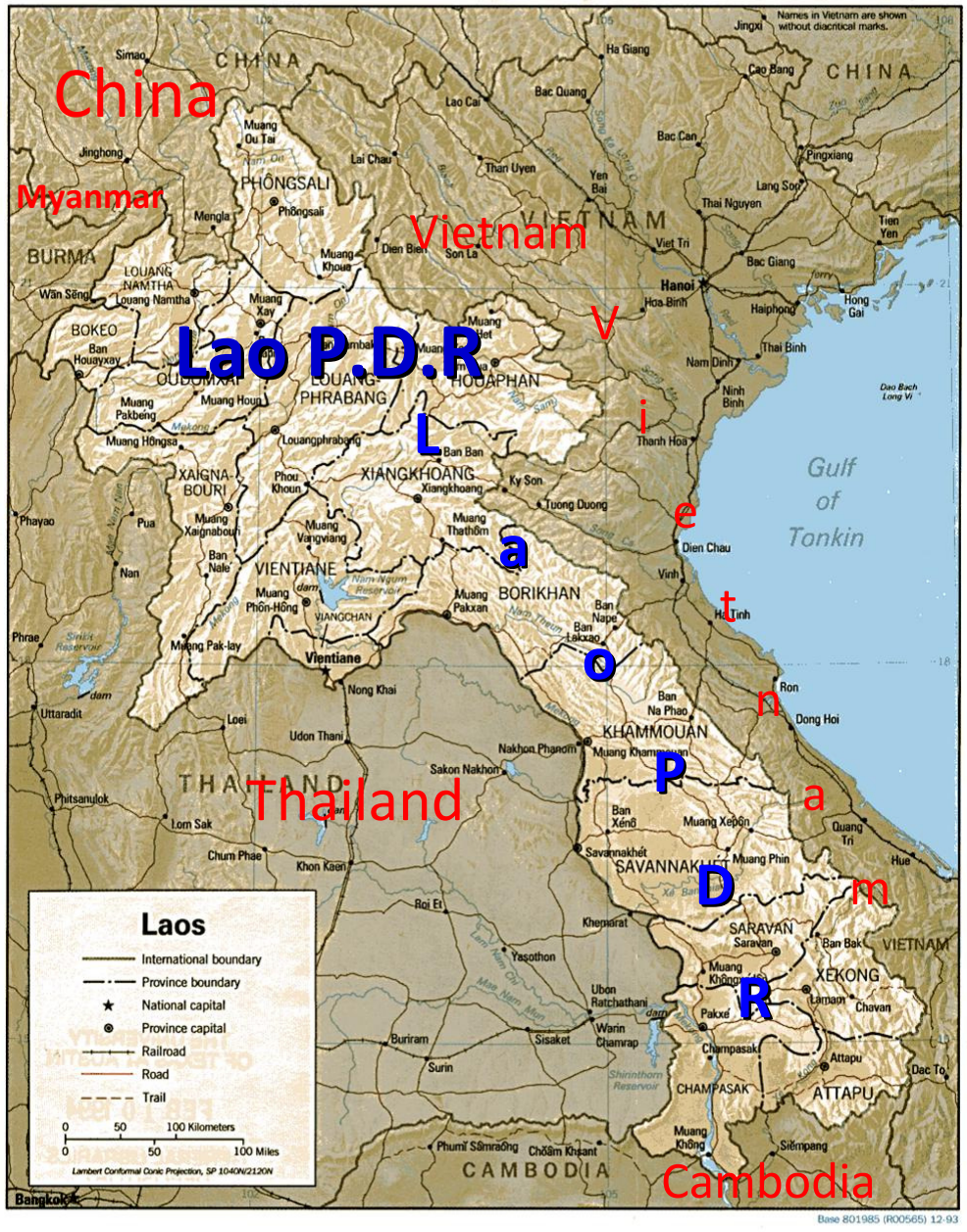
Outline

- Overview
- Current Country Activities related to AWCI
  - Climate Change Assessment and Adaptation Study Capacity
- Ideas and Views of possible country involvement in the next stage of AWCI
  - Future approaches for improvement

Overview



Lao PDR is a landlocked country situated in the central of the Indochina peninsula (Southeast Asia). It is bordered by five neighboring countries namely Vietnam, China, Myanmar, Thailand and Cambodia. Lao PDR has a total area of 236,800 square kilometers with the population of around 6 millions.

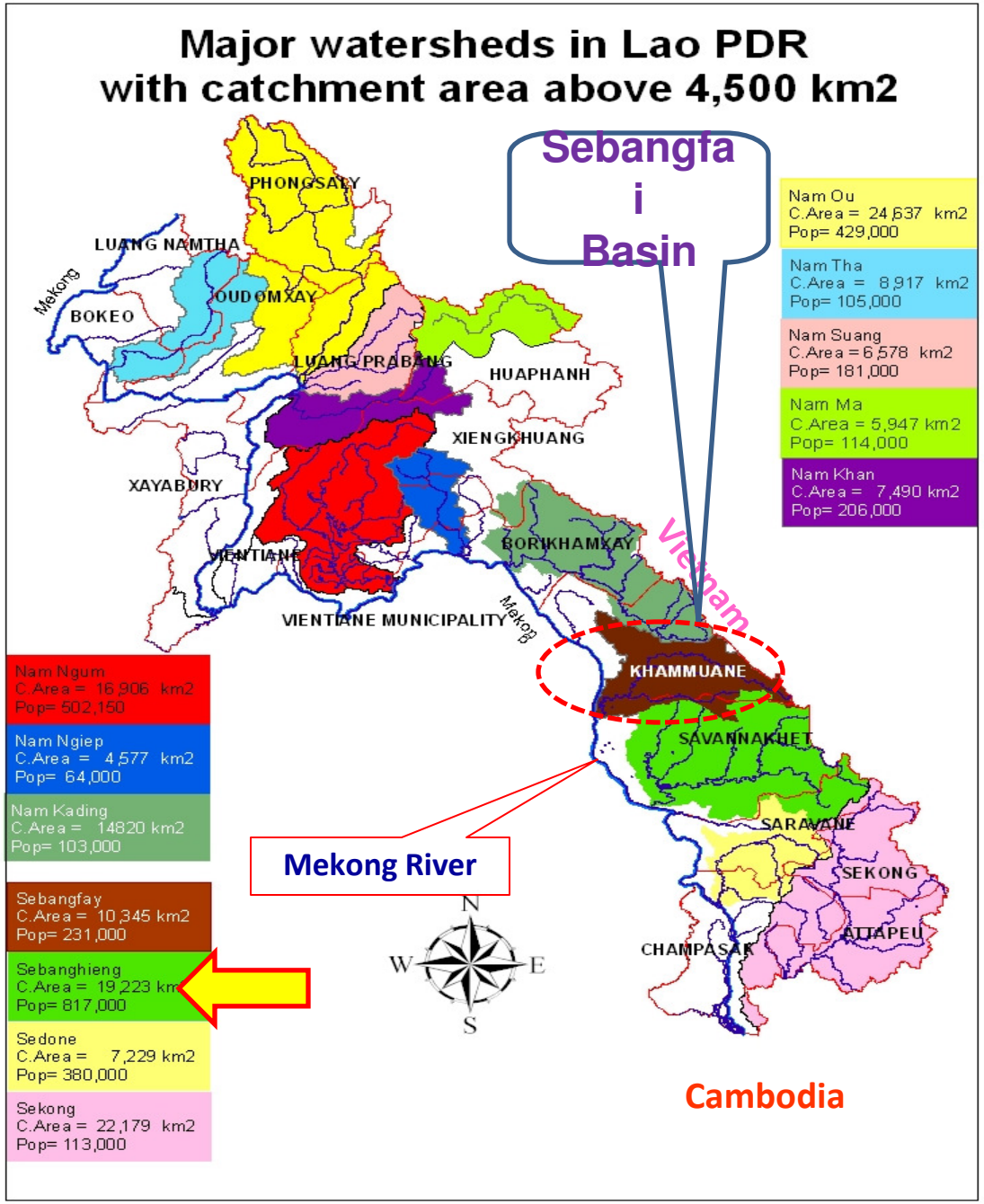
The country has 16 provinces and one capital city.

Lao PDR is geographically setting of three ecological zones:

(i). Plains of the Mekong River and its major tributaries;

(ii). Mountainous areas: The extensive mountain ranges cover 70 percent of the entire territory, stretching from the left bank of the Mekong;

(iii). High plateaus.



12 Major Basins:

1. Nam Ou
2. Nam Tha
3. Nam Suang
4. Nam Ma
5. Nam Khan
6. Nam Ngum
7. Nam Ngiep
8. Nam Kading
9. Sebangfai
10. Sebanghieng
11. Sedone
12. Sekong

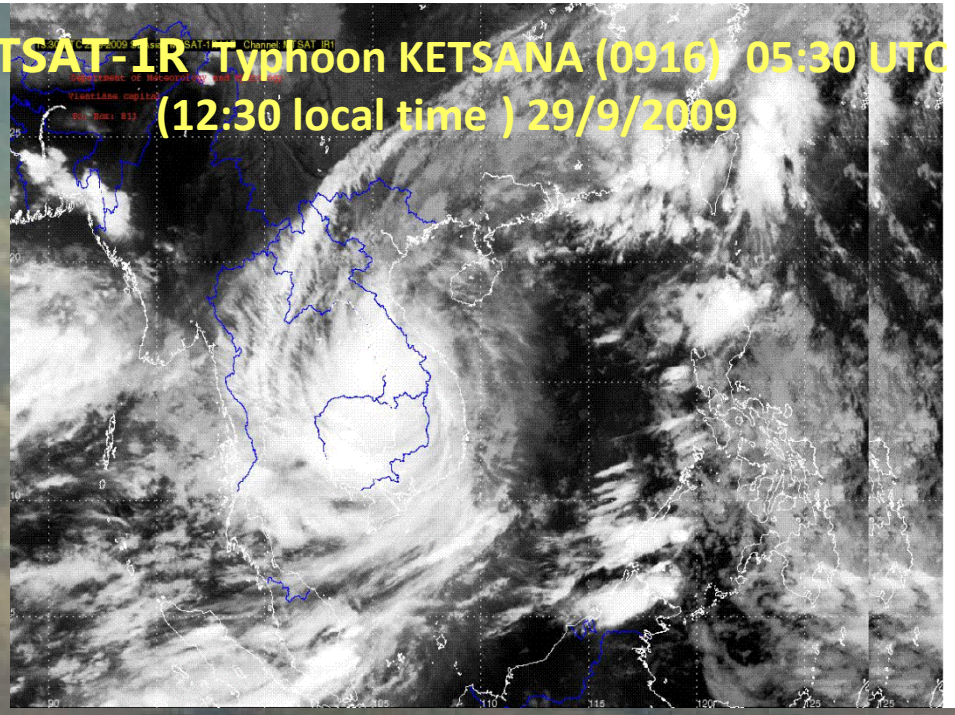
Extreme Climate and Disastrous Phenomenon

Average about 3 - 4 Tropical Cyclones per annum of various intensities, after made landfall to Republic of Vietnam, these TCs best tracked through Lao territory where they cause prolonged heavy rainfall and flooding. There are also flash floods and landslides associated with heavy long lasted rainfall in mountainous areas.

Drought spell about 2-3 weeks often occurs during the end of June to the beginning of July during the crop planting season causing harmful drawbacks to crop yield .

✓The absolute minimum temperature recorded - 03.3°C at station Xiengkhuang on 25 December 1999.

✓The absolute maximum recorded temperature is 44.0 °C at station Savannakhet on 07 April 1974.



Climate change and variability is a key issue in Lao PDR. It is a real threat, concern and challenge for the whole country. This national, regional and global adverse phenomenon arising from the significant increase of GHG emission in the atmosphere. The Government of Lao PDR has clearly recognized the issue. As a LDC, Lao PDR is one of most vulnerable countries suffering from destructive impacts of climate change. In recent years, Lao PDR has been affected by severe floods and droughts in the central to southern parts which resulted in huge damages and loses.

Typhoon Ketsana 2009

Impacts by TY KETSANA

- Province : 5
- District : 43
- Village: 822
- Population : 272.943 people
- Dead : 28
- Missing : 1
- Injured : 94
- Household : 52.547 HHs affected; Displaced Household : 10,670.
- Rice fields : 31,967 hectares of rice and crop fields were damaged
- 3.178 houses affected; 1.194 houses damaged completely.
- Schools: 91. Hospitals: 10. Irrigation: 144. Roads: 47

Total damage 58 million USD (Data source: NDMO , MLSW)

Economic Loses from Typhoon 2009

Sector and sub-sectors.	Damage and loss as proportion of total
Infrastructure	
Transport	30%
Communications	5%
Water management and irrigation	2%
Energy	6%
Sub-sector total	43%
Social Sectors	
Housing	15%
Health	2%
Education	2%
Sub-sector total	19%
Production sectors	
Agriculture, livestock and Fisheries	31%
Industry and Commerce.	7%
Sub-sector total	38%
TOTAL	**US$ 58 million**

Drought records in Lao PDR

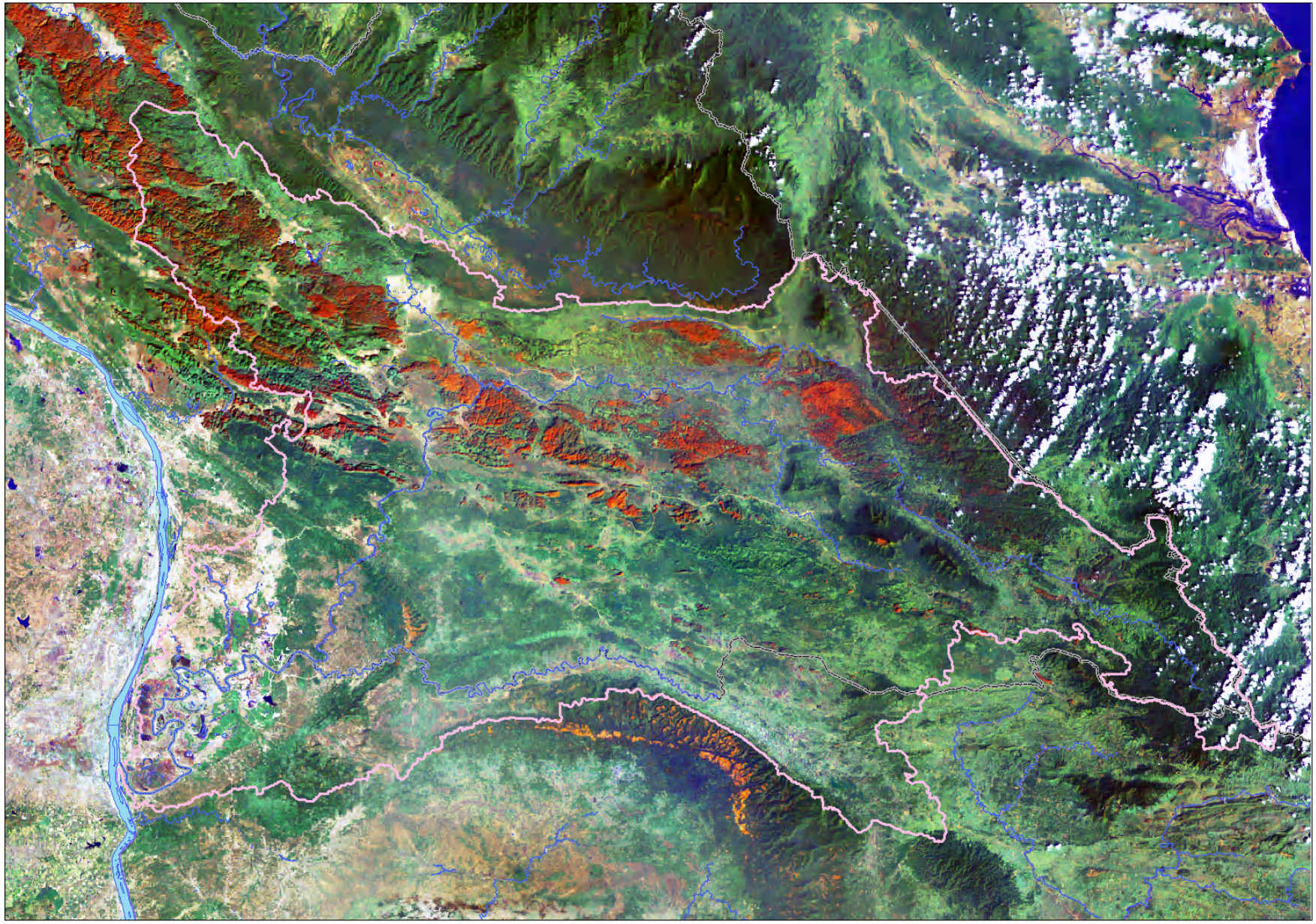
Annual Flow Change


ເຊຊ້ັ້ງຊ້ ອຍ
Xesangxoy
26 Feb 1999

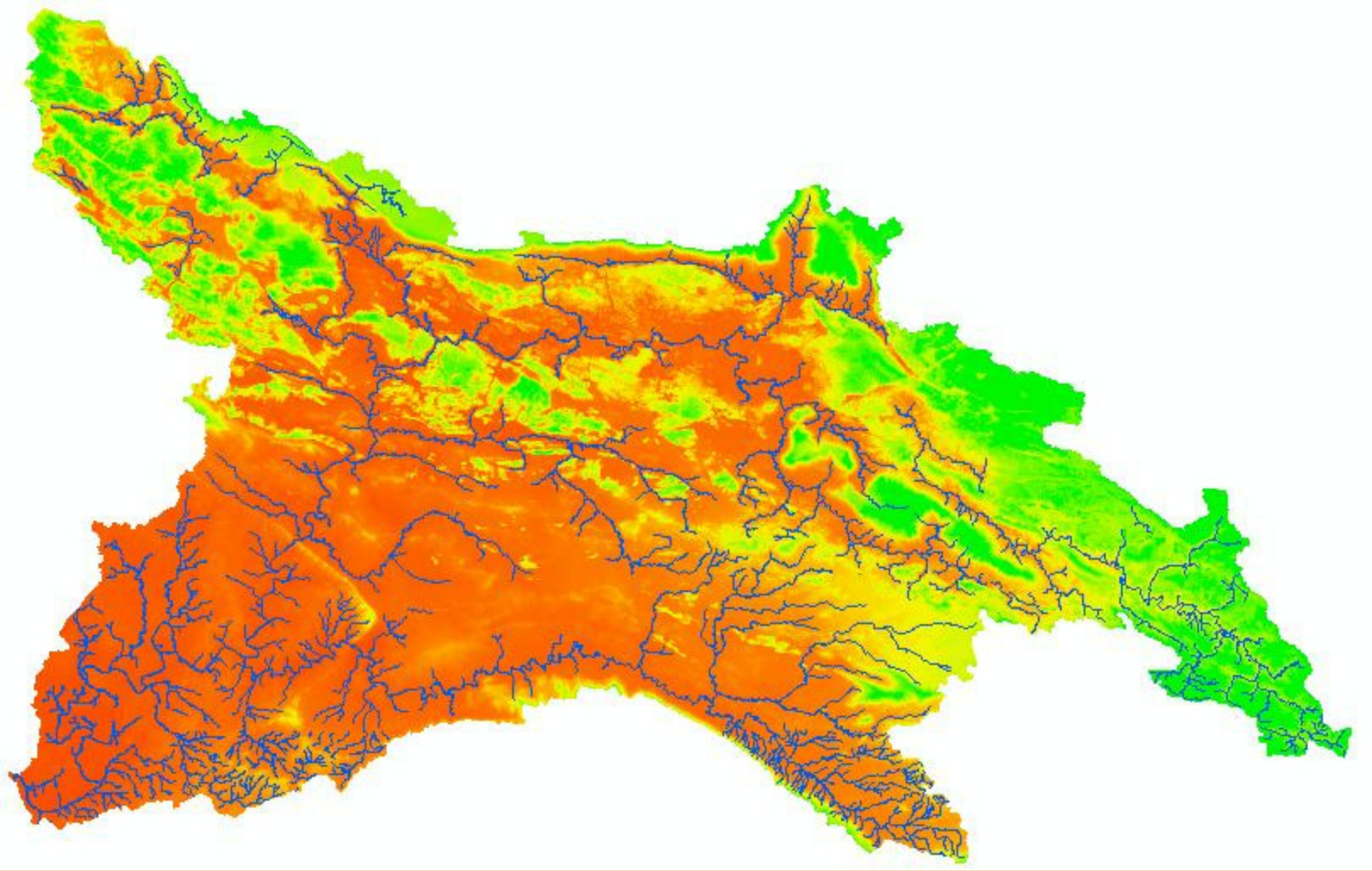
➢ Current Country Activities related to AWCI

- Pilot Area Basin and data collection sites selected;
- Hydro-meteorological data uploaded to templated database;
- Process Data Quality Control by using AWCI QC Interface developed by AWCI data center ;
- In-situ field observation, monitoring , forecasting and warning for national practices and service delivery to decision makers and risk communities.

Xebangfai Basin in Khammouane province



Xebangfai main stream and tributaries



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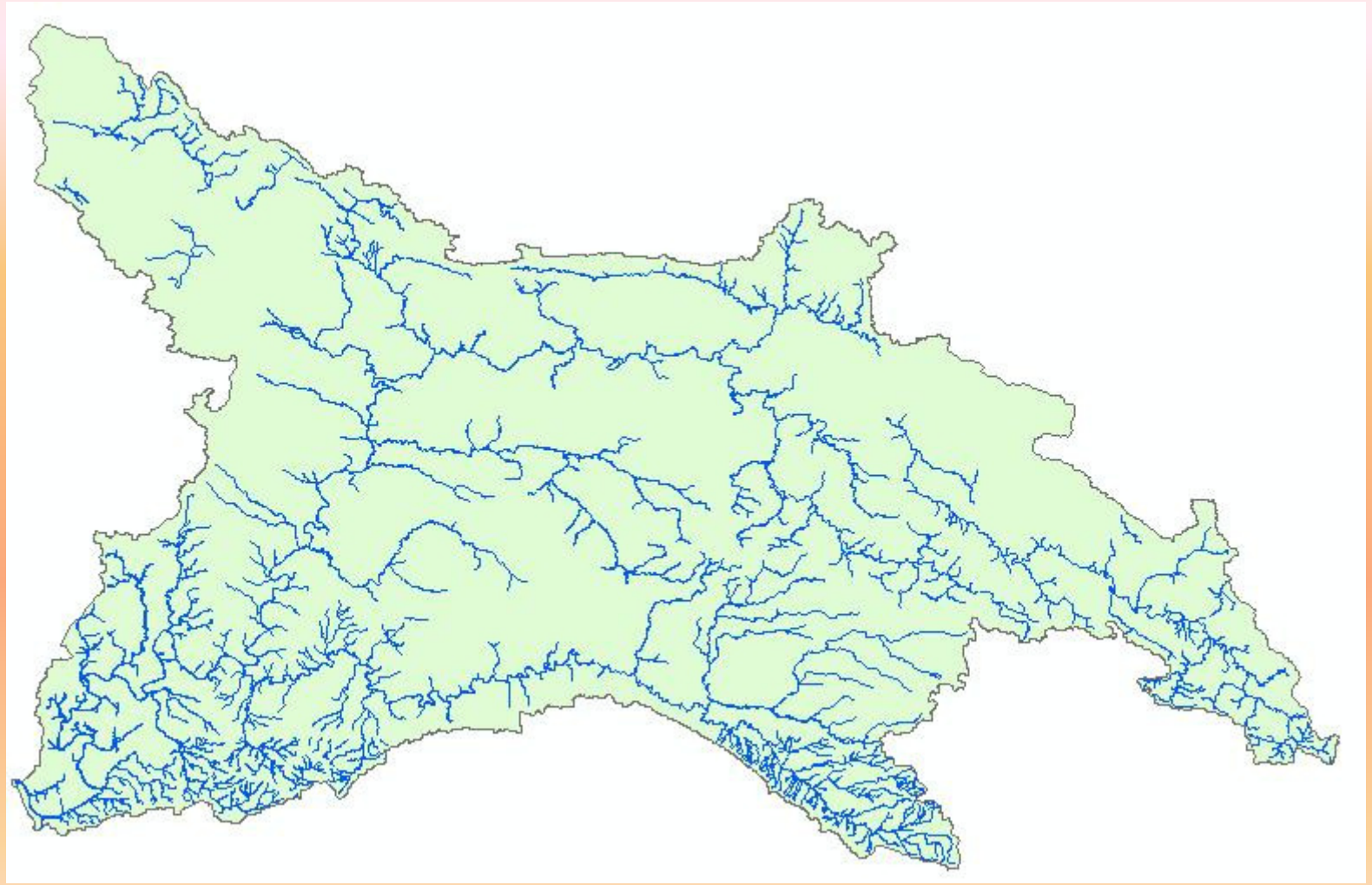
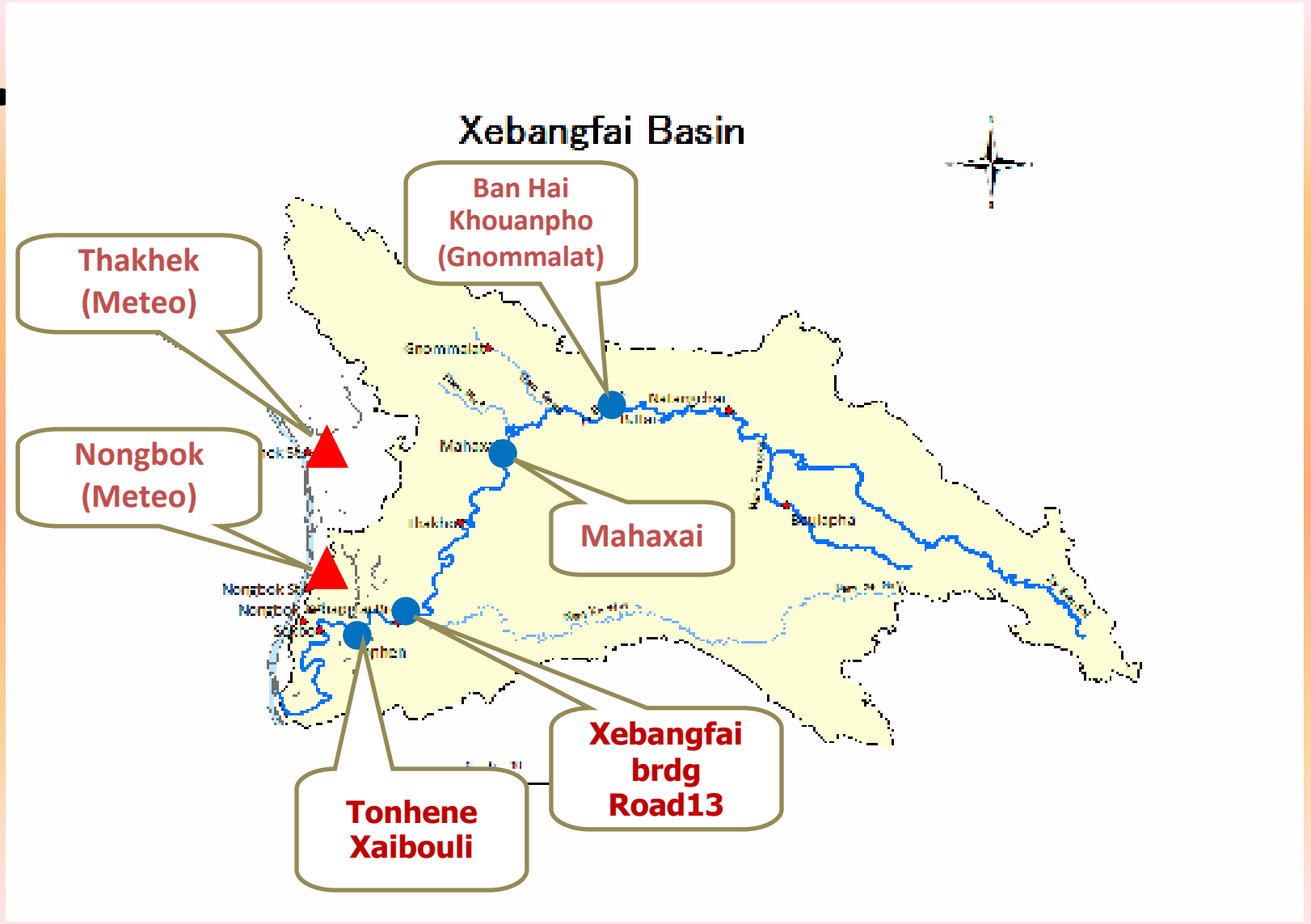


Xebangfai basin
with selected data collection sites



Selected sites for data contribution

Name	District	Village	River	Latitude N	Longitude E	Altitude
Thakhek **(Meteo)**	Thakhek	Chompheth		17° 23′	104° 49′	151
Nongbok **(Meteo)**	Nongbok	Song Muang Tai		17° 09′	104° 49′	147
Xebangfai brdg Road13	Xebangfai		Xe Bangfai	17° 04′38″	104° 59′06″	140
Tonhen	Xaibouli		Xe Bangfai	17° 03′02″	104° 53′39″	
Mahaxai	Mahaxai		Xe Bangfai	17° 24′48″	105° 11′59″	155
Ban Hai Khouanpho	Gnommalat	Hai	Xe Bangfai	17° 29′43″	105° 25′30″	

Climate Change Assessment and Adaptation Study Capacity

❖ **Commitments of Lao Government :**

✓Ratified the UNFCCC in 1995 and the Kyoto Protocol in 2003;

✓Established the National Steering Committee on Climate Change (NSCCC) May 2008;

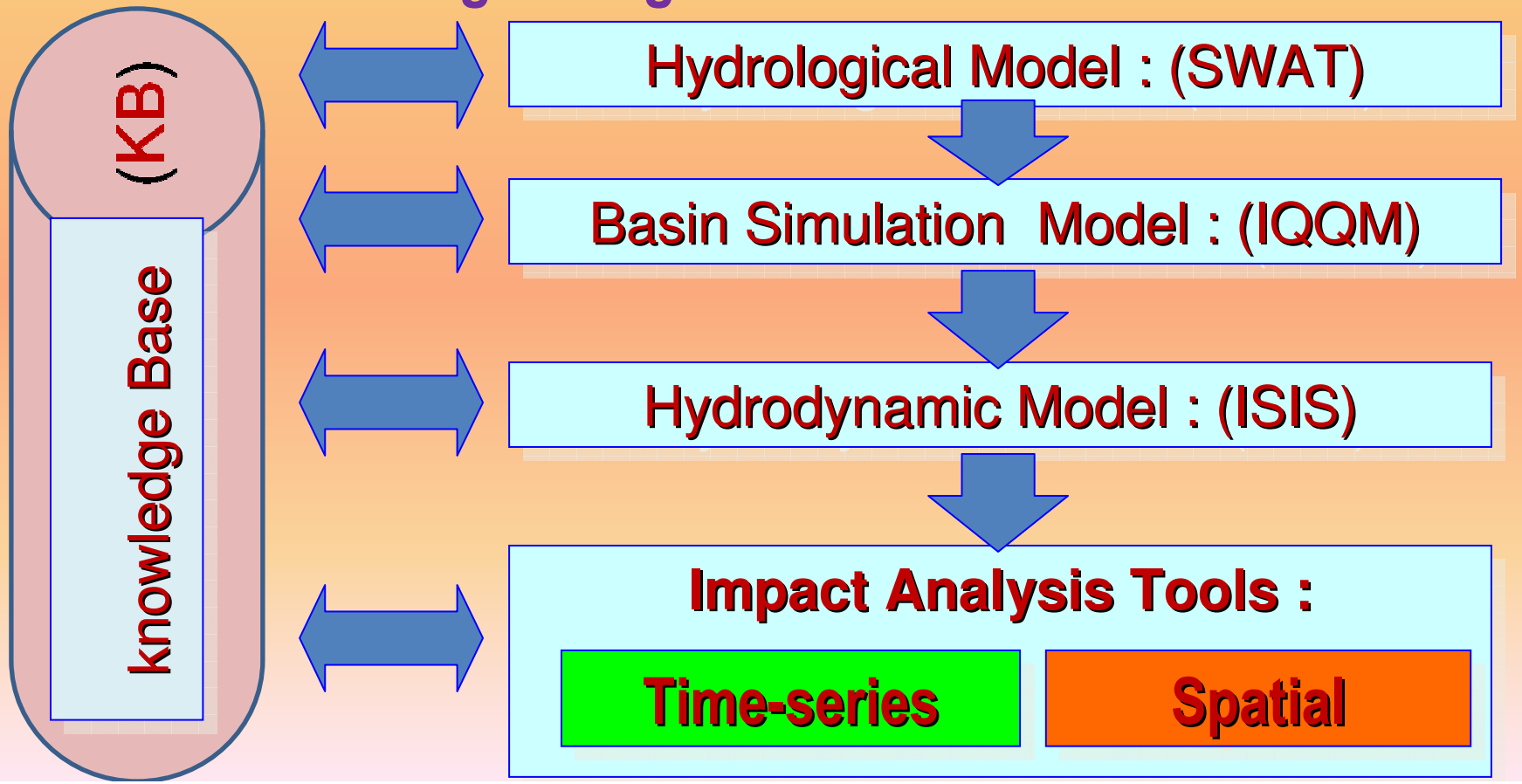
✓Established Climate Change Office Sept. 2009;

- ✓ Collaborative CCAA activities conducted, learning by doing, over some basins by concerned Departments under former WREA, currently MoNRE in collaborating with and implementing the MRC's Programme with line ministries;

- ✓ Lessons learnt and best practices will be extended and applied on other prioritized basins, such as Xebangfai etc…;

❖ Tools and Models in Applications

- The MRC developed Tool Box : termed as Decision Support Framework (DSF) encompassing of Database or Knowledge Base (KB), Models and Analysis Tools working through a common interface :



- **Techniques and Tools for Operational Monitoring, Forecasting and Warning :**

- ✓ **Data collection, measurement at all sites are manually carried out by observers ;**
- ✓ **Linear Regression and Empirical techniques are being utilized for national forecasting practices ;**
- ✓ **The MRC developed URBS Model has been used for flood forecasting over Xebangfai Basin ;**
- ✓ **Also utilized the Outputs/products of the Flash Flood Guidance System (FFGS) of MRC's FMMC as advisory for issuing warning of Flash Flood.**

➢ Ideas and Views of possible country involvement in the next stage of AWCI

- ✓ So far Lao PDR has not yet much involvement, due to short of capacity on both scientific know-how and national budget constraints ;
- ✓ Lao PDR is ready to involve and contribute to the next stage of AWCI, in this context we are expecting of capacity building benificial from the concept design in setting up GEOSS/WCI "*Work Benches*". In regard the actual implementation, Lao government's assignment of appropriate agencies, Departments is deemed essential.

Future approaches for improvement

- ✓ Set up mechanism for National Integrated Water Resources Management (N-IWRM) and individual River Basin Organization or Committee (RBO/RBC) ;
- ✓ In deep scientific Capacity building of national Modeling Unit/Team for CCAA and Water Resources and Environment Researches. This has to be in line with the Implement Design of GEOSS/WCI Work Benches ;
- ✓ In deep scientific capacity building of national hydro-meteorological integrated and coordinated observation, quality control, data and information sharing, forecasting, and early warning dissemination systems. This to be strictly harmonized with the Implement Design of GEOSS/WCI Work Benches.


Mekong-tributary
Thank You
for kind attention !

TY, TC & TS which best tracked Lao PDR in 2011